

# Assignment

## Write

Describe the difference between quadratic equations in general form, factored form, and vertex form.

## Remember

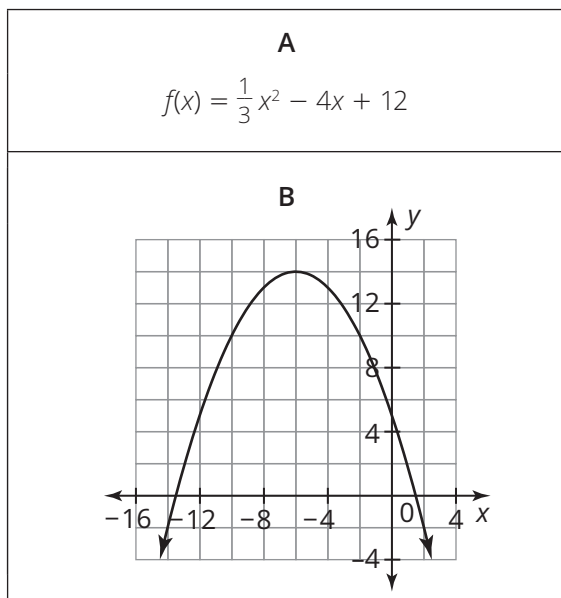
You can use what you know about the structure of quadratic functions represented as tables, equations, graphs and scenarios to compare the characteristics of two quadratic functions represented in different forms.

## Practice

1. Analyze each pair of representations. Then, answer each question and justify your reasoning.

a. Which function has a greater y-intercept?

b. Which function has a greater average rate of change for the interval (1, 2)?



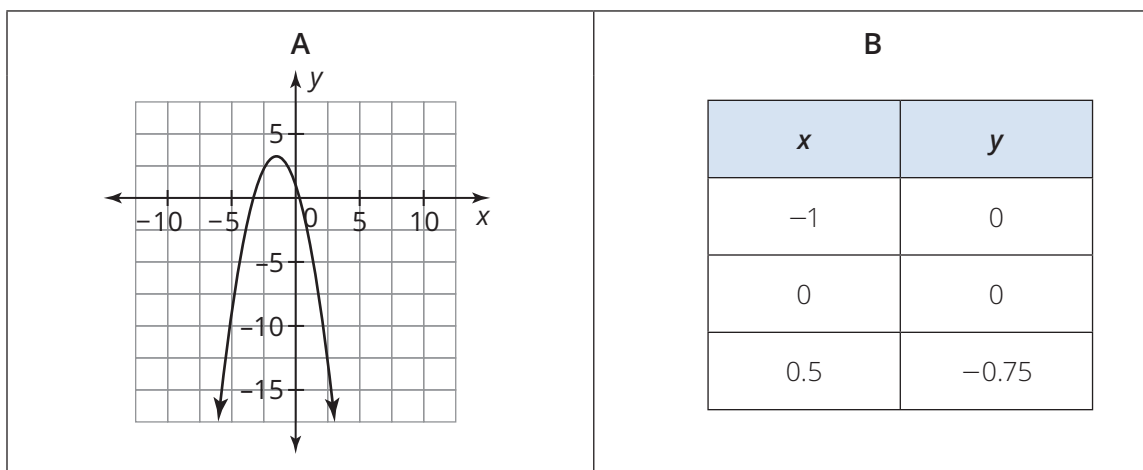
**A**

$$f(x) = \frac{1}{2}x^2 + 9$$

**B**

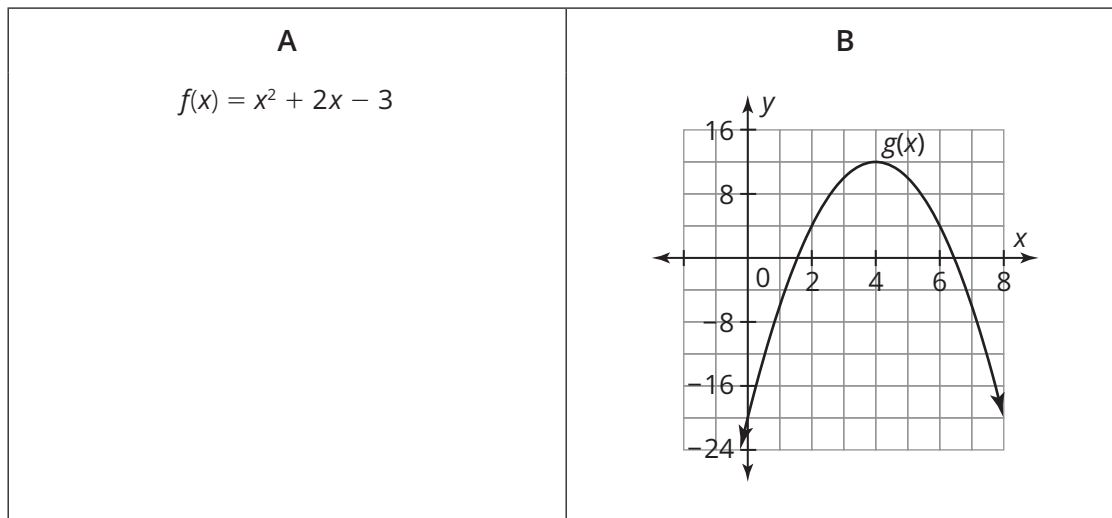
x	y
0	9
1	7
2	1

c. Which function has an absolute maximum with a greater y-value?



## Stretch

Analyze each pair of representations.



Write a function  $m(x)$  that has an average rate of change for the interval  $(1, 2)$  that falls between the average rate of change for the same interval for  $f(x)$  and  $g(x)$ .

## Review

1. Write an equation for a quadratic function in vertex form with vertex  $(4, 9)$  that has a  $y$ -intercept of  $(0, 12.2)$ .
2. Write an equation for a quadratic function in factored form with zeros  $(-7, 0)$  and  $(10, 0)$  that passes through the point  $(-4, -10)$ .
3. For each exponential expression, determine an equivalent expression with a  $B$ -value of 1 and a  $C$ -value of 0.
  - a.  $g(x) = 2^{5x}$
  - b.  $2^{x-5}$